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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,569	03/09/2004	Arne Berg	WEAT/0471.P1	2474
36735	7590	09/18/2006	EXAMINER	
PATTERSON & SHERIDAN, L.L.P. 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056			PAK, SUNG H	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 09/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/796,569	Applicant(s) BERG ET AL.	
	Examiner Sung H. Pak	Art Unit 2874	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2006.  
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.  
 4a) Of the above claim(s) 2-5, 27-30 and 40-46 is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1, 6-26, 31-39 is/are rejected.  
 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicant's response filed 7/3/2006 has been entered. After a careful re-consideration of the pending claims in view of the response, the previous ground of claim rejection is hereby withdrawn. However, the pending claims are not patentable over the prior art of record, and a new ground of claim rejection is provided in this office action.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,6-8, 10-11, 18, 20-21, 23-24, 31, 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Woo (US 6,882,595 B2).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

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Woo reference discloses an apparatus for sensing acoustic pressures in a fluidic media comprising a housing enclosing a liquid ('34' Fig. 5); a diaphragm attached to the housing ('35' Fig. 5; col. 7, ll. 66- col. 8, ll. 3), wherein the diaphragm transmits the acoustic pressures from the fluidic media to the liquid (col. 8, ll. 3-5); an optical sensor positioned within the liquid for sensing the acoustic pressures in the liquid ('55' Fig. 5);

wherein a filler member is disposed within the housing (which would inherently reduce the volume of the liquid enclosed in the housing; the filler member being a "compensator" disclosed in col. 8, ll. 8-10);

wherein the sensor is affixed to a mandrel ('24' Fig. 5), the mandrel coupled to the housing by pins ('48' Fig. 5);

wherein the sensor comprises a coil of optical fiber wound around a mandrel (Fig. 5);

wherein the housing comprises at least one sealed feedthrough in the housing for passing an optical fiber to an interior of the housing (Fig. 5);

wherein the diaphragm is corrugated (col. 7, ll. 67) and welded to the housing (col. 7, ll. 14-16);

wherein the optical fiber has a grating formed therein ('27a, 27b' Fig. 5).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9, 19, 22 are rejected under 35 U.S.C. 103(a) as being obvious over Woo (US 6,882,595 B2) in view of Maas et al (US 6,549,488 B2).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the

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reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C.

103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Woo discloses an apparatus as discussed above. However, Woo does not explicitly teach the use of an O-ring to couple the mandrel on to the housing.

On the other hand, such use of O-rings is well known in the hydrophone art, for example, as shown by Maas et al (US 6,549,488 B2). Maas explicitly teaches the use of an O-ring to non-rigidly coupling the fiber wound mandrel to the external housing (Fig. 3A). Such use of an O-ring is known by one of ordinary skill in the art as advantageous and desirable because it provides a simple and cost effective way of mounting fiber wound mandrel in a hydrophone that efficiently seals the coupling portion for secure coupling. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Woo to have an O-ring as taught by Maas.

Claims 12-16, 25-26, 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woo (US 6,882,595 B2) in view of Quigley et al (US 6,706,348 B2).

Woo reference discloses an apparatus as discussed above, however it does not explicitly teach the use of a helical/ spiral groove or a tunnel for routing optical fibers from one end of the mandrel to the other end as claimed.

On the other hand, the use of a helical/ spiral groove or tunnel for routing optical fibers from one end of the mandrel to the other end of the mandrel in optical fiber sensing device is known in the art, for example, as shown by Quigley (Figs. 16-18). Such grooves and tunnels are

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known by one of ordinary skill in the art to be advantageous and desirable because it allows for sensing optical fibers to be securely disposed on a device mandrel such that the fibers are effectively prevented from unintentional displacement. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Woo to have grooves and tunnels as taught by Quigley.

Claims 17, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woo (US 6,882,595 B2).

Woo reference discloses an apparatus as discussed above. Although Woo discloses the use of plurality of ports on the external housing ('75' Fig. 5), it does not explicitly teach that the ports are selectively opened via valves.

On the other hand, the use of fluid valves are well known and common in the hydrophone art. Such valves are advantageously used to provide selective opening for pressure equalization, prevention of contaminants from entering the hydrophone device, etc. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Woo to have selective valve on the device's external housing ports.

### ***Response to Arguments***

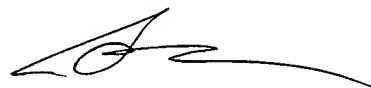
Applicant's arguments with respect to pending claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Sung H. Pak  
Primary Patent Examiner  
Art Unit 2874